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124. Proposed by F. P. MATZ, Sc. D., Ph. D., Professor of Mathematics and Astronomy in Defiance College, Defiance, O.

Find the average area of a spherical polygon of $n=6$ sides.

MISCELLANEOUS.

124. Proposed by J. W. YOUNG, Graduate Student. Cornell University, Ithaca. N. Y.

Prove that the general value of θ, which satisfies the equation

$$(\cos\theta+i\sin\theta)(\cos 2\theta+i\sin 2\theta)\ldots\text{to } n \text{ factors}=1 \text{ is } \frac{4m\pi}{n(n+1)};$$

where m is any integer ($i=\sqrt{-1}$).

125. Proposed by F. P. MATZ, Sc. D.. Ph. D., Professor of Mathematics and Astronomy in Defiance College, Defiance, O.

Assume $m=nt+\varepsilon-\omega$, thus giving $v=m+e\sin v$ as the relation connecting the mean and eccentric anomalies, then express $x=a\cos v$, $y=b\sin v$, and $r=a(1-e\cos v)$ by a Fourier series in terms of m.

BOOKS AND PERIODICALS.

Graphs. By Robert J. Aley, A. M., Ph. D., Professor of Mathematics in the Indiana University. Pamphlet Form, 21 pages. Price, 10 cents. Boston and Chicago: D. C. Heath & Co.

This is No. 6 of Heath's Mathematical Monographs issued under the general editorship of Webster Wells, S. B., Professor of Mathematics in the Massachusetts Institute of Technology. In this monograph, Dr. Aley has pointed out the various uses that are being made of Graphs in almost every department of knowledge. In addition to plotting a temperature curve, four problems are solved by means of graphs, of which the first is the following: "A travels 4 miles an hour, B 6 miles an hour. If A has two hours the start, when and where will B overtake him?" Then comes the solution of Linear Equations in two variables, and following these, Simultaneous Quadratics, closing with the graphic representation of complex numbers.

College Algebra. By Leonard Eugene Dickson, Ph. D., Assistant Professor of Mathematics in the University of Chicago. First edition. First thousand. 8 vo. Cloth, vi+214 pages. Price, $1.50. New York: John Wiley & Sons.

"This text," the author tells us, "is intended primarily for college and technical schools. By treating only the subjects usually given in the college course in algebra, space has been gained for more detailed exposition of the more difficult topics." The work begins with a treatment of Number in Algebra; Surds and Imaginaries. Then follows in order the subjects Exponents—Logarithms; FactorTheorem—QuadraticEquations; Simultaneous Equations—Determinants; Ratio—Proportion, Variation, the Progressions, Compound Interest and Annuities; Undetermined Coefficients, Partial Fractions; Permutation and Combination, Binomial and Multinomial Theorem; Probability, Mathematical Induction, Limits, Indeterminate Forms; Convergency and Divergency of Series; Power Series and other series, Summation of Series, the Method of Differences, Graphic Algebra,